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**Strain manipulation of anomalous Hall response in GaMnAs micromechanical buckled Hall beam structure** CHANUK YANG, Seoul National University, HYUNG KOOK CHOI, TAI HOON KIM, YUN DANIEL PARK — The non-magnetic manipulation of magnetic properties of diluted magnetic semiconductors (DMS) has recently received much attention, such as magnetization by electric field [1], and magnetic anisotropy by strain engineering [2]. Especially, in GaMnAs, the spin-orbit interactions (SOIs) are highly strain-dependent and the applied magnetic field plays a crucial role in determining magnetic anisotropies (MA), anisotropic magnetoresistances (AMR), and the intrinsic anomalous Hall effect (AHE) [3]. Here, we present AHE of local-strain-induced GaMnAs micro-Hallbeam by fabricating mechanical suspended structure. We observe a suppression of the AHE that varies symmetrically about the centre of the buckled beam due to strain-related SOIs.

[1] H. Ohno et al., Nature 408, 944 (2000); Y.D. Park et al. Science 295, 651 (2002)

[2] T. Dietl et al. PRB 63, 195205 (2001); M. Glunk et al., PRB 79,195206 (2009); J. Wenisch et al., PRL 99, 077201 (2007); A. W. Rushforth et al., PRB 78, 085314 (2008)

[3] Nagaosa, N. et al., Reviews of Modern Physics 82 (2), 1539 (2010).

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